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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/583,732

09/25/2007

Fabian Doling

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EXAMINER

IQBAL, SYED TAHA

ART UNIT

PAPER NUMBER

1793

NOTIFICATION DATE

DELIVERY MODE

03/16/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@hershkovitz.net
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Office Action Summary	Application No.	Applicant(s)	
	10/583,732	DOLING, FABIAN	
	Examiner	Art Unit	
	SYED IQBAL	4181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-50 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 18-50 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on ____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/02/2007</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Status of application

Claims 18-50 are pending. Claims 1-17 have been cancelled as of 04/02/2007.

Information Disclosure Statement

The IDS lists items which are originally in a different language than that the examiner understands. There are no abstract translations provided for the patents listed therein.

The items crossed out in the IDS are those which did not have an accessible translation to the examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 18 and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what the "highest possible proportion of hydrogen" encompasses.

Claims 25 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim language leaves it unclear whether the pressure swing adsorption and selective oxidation are required or not. The claims dictate that the said processes are followed by the shift stage as a further process stage.

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Claims 29-31 and 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The language in line 1 of claims 29 and 30 and 31 "...the at least one of..." and "...the least one of..." respectively, is unclear.

Claim 21-28, 39, 43, 44, 49 and 50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "hydrogen carbons" is unclear the meaning of which is indefinite in the art. The specification does not provide significant evaluation of a definition of the said term.

It is further noted that proper Markush language was not employed in claims 18-50, as described by MPEP § 803.02. For example, claim 18 declares "...resulting during the at least of production and finishing of a fibrous web..." this should read: "...resulting during the production of one member selected from the group consisting of:..."

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18, 19, 27-30, 32-36, 43-46 and 48 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Larson et al. "Combined Biomass and Black Liquor Gasifier/Gas turbine cogeneration at pulp and paper mills" Translation of the ASME. July 1999.

In regards to claims 18, 19, 32 and 33, Larson teaches using biomass fuels such as bark and pulp residues in "biomass gasifier/gas turbine" systems. The gasification unit generates energy/heat. During the gasification hydrogen and carbon monoxide are produced (Page1 Para2) (Table1).

In regards to claims 27 and 28, Larson teaches generating additional steam from biomass when steam derived from black liquor was insufficient (Pg1 Col2. line1).

In regards to claims 29 and 30, Larson teaches the use of biomass-gasifier/gas turbine combined cycle cogeneration systems for pulp and paper mills. Also taught is that such cogeneration systems are primarily designed to meet process steam needs. This would inherently suggest that heat and energy is provided to where it is needed.

In regards to claims 34-36, and 48, Larson teaches a gasifier which uses biomass such as bark and pulp from paper mill to generate energy. During the gasification hydrogen and carbon monoxide are produced (Page1 Para2) (Table1).

In regards to claims 43 and 44, Larson teaches the use of an additional biomass boiler when the steam generated from black liquor is insufficient.

In regards to claims 45 and 46, Larson teaches utilizing biomass-gasifier/ gas turbine combined cycle cogeneration systems for pulp and paper mills. Also taught is that such cogeneration systems are primarily designed to meet process steam needs. This would suggest that the heat and energy is being provided to where it is needed.

Accordingly, claims 18, 19, 32-36 and 48 are anticipated by the reference. In any event, the claims would be obvious and the since anticipation is the epitome of obviousness. Claims 27, 28, 43 and 44 are also anticipated by the reference. In any event these claims would also be obvious over the reference since, one skilled in the art would envisage the increase in input fuel, biomass, to achieve additional output product, energy. Claims 29, 30, 45 and 46 are anticipated by the reference. In any event the claims would also be obvious over the art since, one skilled in the art would appreciate that the energy produced by a generation unit would be provided to where an energy deficiency occurs in a system.

Claim Rejections - 35 USC § 103

Claims 20-26, 37-42, 49 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larson et al. "Combined Biomass and Black Liquor Gasifier/Gas turbine cogeneration at pulp and paper mills" Translation of the ASME. July 1999, in view of Johnssen CA2200491.

Larson does not expressly state that the waste biomass was converted in to methanol. It also doesn't it also does not expressly state utilizing any reformers or shift reactions were used to generate hydrogen gas from carbon monoxide.

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In regards to claims 20-26, and 49, Johnssen teaches a process for generating electrical energy from regenerative biomass. Johnssen discloses that it is known in the art to produce methanol from biomass and then convert the methanol, in a reformer, into a hydrogen and carbon monoxide containing gas (Disclosure section Pg2 Para2). The reference discloses that the crude gas from a reformer has equal parts hydrogen and carbon monoxide. However, when the amount of steam is increased, the hydrogen/carbon monoxide volumetric ratio increases to more than 3 (Disclosure Pg8 Para1). This would suggest that the carbon monoxide reacts with steam to produce hydrogen gas and carbon dioxide. Johnssen teaches that crude gas from a reformer is purified by enriching it with hydrogen. This is disclosed to be done by pressure swing adsorption. The introduction of steam for increased hydrogen generation is indicative of the selective oxidation of carbon monoxide to carbon dioxide (Disclosure Pg9 Para2).

In regards to claims 37-42, and 50, Johnssen teaches the state of the art in which it is known to use a reformer which generates hydrogen and carbon monoxide from biomass derived methanol (Disclosure section Pg2 Para2). The reference also discloses that the crude gas from a reformer has equal parts hydrogen and carbon monoxide. However, when the amount of steam is increased, the hydrogen/carbon monoxide volumetric ratio increases to more than 3 (Disclosure Pg8 Para1). This would suggest that the carbon monoxide reacts with steam to produce hydrogen gas and carbon dioxide. Johnssen teaches that crude gas from a reformer is purified by enriching it with hydrogen. This is disclosed to be done by pressure swing adsorption.

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The introduction of steam for increased hydrogen generation is indicative of the selective oxidation of carbon monoxide to carbon dioxide (Disclosure Pg9 Para2).

At the time of invention it would have been obvious to one having an ordinary level of skill in the art to perform the invention of Larson and further adding the steps of Johnssen. The motivation of doing so would have been to utilize the calorific value of carbon monoxide and create a method/system which utilizes the energy content of the biomass to a greater content (Johnssen, disclosure section Pg3 para2).

Claims 31 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larson et al. "Combined Biomass and Black Liquor Gasifier/Gas turbine cogeneration at pulp and paper mills" Translation of the ASME. July 1999, in view of Fujimura, EP1136542A1.

Larson teaches that utilization of hydrogen, produced from biomass, in a gasification step to generate energy. However, Larson does not expressly teach the use of hydrogen to generate energy by a fuel cell.

Fujimura teaches the use of a system for generating energy. In the invention of Fujimura combustible materials are gasified and the resulting gas is used in a fuel cell to generate electricity, while waste heat produced in the fuel cell is used as a heat source for the gasification (Col3 line15).

At the time of invention it would be obvious to use the hydrogen produced by the process of Larson in a fuel cell, as taught by Fujimura. One would be motivated to use a

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fuel cell to produce heat/energy because there is reasonable expectation of success as shown by Fujimura.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SYED IQBAL whose telephone number is (571)270-5857. The examiner can normally be reached on Monday to Thursday 7:30am EST to 6:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 5712721358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wayne Langel/
Primary Examiner, Art Unit 1793

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/S. I./

Examiner, Art Unit 4181